

BRIEF ARTICLES

ALTERATIONS IN SELF-CONCEPT UNDER HYPNOSIS

EARL D. MARKWELL, JR.

Humboldt State College

This study was designed to help answer 2 questions: (a) Do attitudes toward the self change under hypnosis? (b) What are the correlates in the hypnotic process and situation of such alteration? Measures of self-favorability, self-acceptance, and self-criticalness both in the waking and hypnotic state were obtained from 44 volunteers via Gough's Adjective Check List. Analysis of variance results of those capable of amnesia when compared with those responding differently indicated that such attitudes did significantly change. Significant correlations were found between contradictory hypnotic and waking ACL answers and measures both of hypnotic depth and relationship to the hypnotist. MMPI profile differences were reported for those whose attitudes became more self-accepting as compared with increased self-criticalness.

Psychologists have for many years concerned themselves with the concept of the self in their research and clinical practice (Allport, 1943, 1955; Bertocci, 1945; Lowe, 1961; Raimy, 1943; Rogers, 1951; Rogers & Dymond, 1954; Snygg & Combs, 1959). Hypnotic techniques have found a place in experimental investigations of the self (Brennan & Gill, 1959; Dorcus, 1956; Erickson, 1955; Farberow & Sarbin, 1950; Klemperer, 1954, 1955). This literature reveals basic differences of opinion about the effect of hypnosis on alterations of attitudes toward the self. White (1941) states

hypnotism is one of the few experimental techniques applicable to human beings whereby it is possible to produce major changes in the organization of behavior. Without discomfort or danger to the subject, provided certain precautions have been taken, it is possible to effect an extensive alteration in those patterns of experience which constitute the self . . . [p. 477].

Statements such as this have stimulated a few experimental psychologists to devote their attention to such questions as: Do attitudes toward the self change under the influence of hypnosis? And, if there is such change, what are the correlates in the hypnotic process and hypnotized subject of such alteration?

Farberow and Sarbin (1950) in their clinical study of the role of the self in hypnotic age regression say that

apparently a "core" personality (self) is revealed which persists recognizably . . . in the various hypnotic situations [p. 305].

Evidence for this statement comes from their qualitative evaluation of Rorschach, Draw-A-

Person, and handwriting data for six subjects who were regressed to 18-, 13-, 6-, and 3-year age levels. Comparison of the findings with two subjects who simulated "regression" to 6 years of age constituted their only controls. Sarbin (1950) conjectures theoretically that favorable motivation for change under hypnosis depends on the degree of participation or congruence of the subject's self-concept and the role of the hypnotic subject as structured by the hypnotist. Brennan and Gill (1959; Brennan, Gill, & Hacker, 1947) believe from their clinical experience that alterations of the ego state do occur as a result of hypnosis which allow for the circumvention or weakening of defense mechanisms and permit therapeutic restructuring. Hypnosis alters the "toning down, inhibiting, or checking" function of the self or ego permitting four kinds of possibilities of change: alterations of body image, changes in mode of thought, releases of affect, and alterations of the control and channelization of motor behavior. Gill and Brennan (1943) illustrate these phenomena in their treatment of a case of anxiety hysteria. Bellak (1955) postulates an ego-psychological theory of hypnosis based on similar beliefs. Leuba (1946) in connection with his work in conditioning experiments interpreted his data to show that hypnosis could be used to limit an experimental subject's attention, to eliminate the effects of extraneous stimuli, and to help control variables (that is, self-initiated stimuli partially connected with his self-conception) within the subject's own behavior. Conn (1949) found that hypnosis permitted a creative, dynamic experience to develop in which the patient more adequately realized what self-acceptance really was and in which the

trance was useful in confronting the experiencing portion of the self with that part of the personality excluded from consciousness. He saw hypnosis as a unifying interpersonal experience which he labeled hypnosynthesis. Kline (1955, 1958) gives great emphasis to the role of the self in determining the response of either a subject or a patient to hypnosis.

. . . tremendous differences . . . exist in relation to the orientation of the self and the emerging physical and emotional attitudes about the self that are part of the hypnotic state and may be expressed only as the hypnotic state is extended in time and explored in terms of the subjects' own reaction to it. Failure to deal with this aspect of the hypnotic subject or patient's response to himself and to the values that develop in relation to the self are serious omissions in the evaluation and understanding of the meaning of the hypnotic state to an individual, whether he be subject or patient [Kline, 1958, p. 85].

Kline's (1955) definition of hypnosis makes ego and ego functioning central to understanding its nature. Klempener (1955) made use of the Verbal Self-Portrait Test to show that hypnoanalytic patients could reveal their psychic traits, conflicts, and unconscious motives through spontaneous self-portraits. Asking the patient "If you were an accomplished artist, how would you paint yourself?" she contrasts their responses to the "as if" situation of this test with spontaneous self-concepts manifested in regression and revivification techniques. Support for her interpretations of the meaningfulness of such material comes from hypnoanalytic case information.

Antagonistic conceptions emerge from a review of these studies, some suggesting that the self changes and others that it may not. The evidence indicates that most of the investigators do believe that certain aspects of the self or ego do change with hypnosis. The present study attempts to determine the influence of hypnosis on self-concept as revealed in modification of attitudes of self-favorability, self-acceptance, and self-criticism by experimental and statistically controlled methods.

METHOD

Measures

Gough's (1955) Adjective Check List, hereafter designated the ACL, was selected as the instrument to provide data on self-attitudes. This list is composed of 300 adjectives arranged alphabetically from "absent-minded" to "zany," and each individual is instructed to signify by checking those he considers self-descriptive. It was adapted for use here by having the subjects give a verbal response during both the waking and hypnotic state rather than

asking them to check in writing those adjectives which were self-descriptive. This adaptation had been standardized and tested for reliability in earlier research (Woolington & Markwell, 1962). The ACL results allowed the computation of self-accepting, self-critical, and self-favorable scores derived from ratios previously established in the development of the instrument.

In view of prior experimental data suggesting that the interpersonal relationship between hypnotist and subject was significant to any change in self-attitude (Kline, 1955, 1958; Sarbin, 1950), a measure of the subject's relationship to the experimenter was obtained by adapting a scale derived from Q sort procedures (Fiedler, 1950). Fiedler's work indicated an experimental method by which one might measure a subject's agreement or disagreement with conceptions of the "ideal" therapeutic relationship as structured from judgments made by both professional psychotherapists and by "lay" people. Scoring the responses of each of the present experimental and control subjects against this theoretical ideal made it possible to derive some measure of their relationship to the hypnotist in quantitative terms. In adapting this scale for the present purpose the word therapist was replaced with hypnotist and the agreement or disagreement with the ideal direction was measured by assigning scores from 7 to 1 for the items of the scale most characteristic to least characteristic of an ideal therapeutic relationship.

Previous study (Woolington & Markwell, 1962) indicated a tendency for subjects given a suggestion of amnesia to show alterations in self-attitude. Personality factors may help explain a subject's ability to so respond (Weitzenhoffer, 1953). It was decided that the Minnesota Multiphasic Personality Inventory (MMPI) was the most suitable instrument to measure some of the possible differences in personality characteristics of the subjects of this experiment and would be helpful in understanding how personality differences might relate to changes in self-attitude. This instrument is in common clinical and experimental use and the reader unfamiliar with it should consult the manual and voluminous literature available (Hathaway & McKinley, 1951).

Subjects

The experimental subjects consisted of 20 volunteers from undergraduate psychology classes. All were selected for study from a larger group of volunteers since they were capable of entering a relatively deep level of hypnosis; and to maintain an equal representation of males and females. Data from the ACLs collected on these experimental subjects was compared with similar measures collected on a control group of 24 volunteers equated for age, sex, and college status (presumed psychological naivete). All experimental and control subjects were volunteers for hypnotic experiments and can be assumed to vary from unselected college classmates in the way volunteers significantly differ from nonvolunteers for hypnotic experiments (Martin & Marcuse, 1957).

Procedure

All experimental and control subjects were seen individually on two separate occasions 1 week apart. When the subjects arrived for the first session they were given the following instructions:

I am going to read you a list of adjectives. Please listen to them carefully and signify by saying "yes" or "no" whether or not you consider each adjective self-descriptive. Don't worry about duplications, contradictions, and so forth. Work quickly and don't spend much time on any one adjective. Try to be frank, and check those adjectives which describe you as you really are, and not as you would like to be.

After taking the ACL at the start of the first session the experimental and control subjects were induced into as deep a hypnotic state as it was possible for them to attain. Induction procedures were standardized by quoting in exact detail the directions for the eye-fixation technique given by Weitzenhoffer and Hilgard (1959, pp. 13-18, Form A). The depth of hypnosis was determined through the use of the Davis and Husband (1931) scale, by assigning a quantitative score of 1 point for each suggestion executed successfully from the following sequence of suggestions patterned after those given by Wolberg (1948).

1. Fluttering of eyelids
2. Heaviness in extremities
3. Drowsiness
4. Closing of eyes
5. Catalepsy of eyelids
6. Catalepsy of limbs (arm)
7. Automatic movements (hand rotation)
8. Disturbances in cutaneous sensations (heat and cold)
9. Partial analgesia (glove anesthesia)
10. Ability to talk in the trance without awakening
11. Fantasy and dream induction (theater visualization)
12. Simple posthypnotic suggestion (posthypnotic blinking)
13. Hallucinations (auditory hallucination of bell ringing)
14. Ability to open eyes without affecting trance
15. Positive posthypnotic hallucination (auditory)
16. Negative posthypnotic hallucination (auditory)

This method was developed from procedures reported by Barry, MacKinnon, and Murray (1931) and Rosenzweig and Sarason (1942). The control group was then released for 1 week.

The experimental subjects were awakened and the presence of an amnesic state checked in a manner suggested by Weitzenhoffer (1957) according to the presence of at least three of the five following criteria.

1. Relative unawareness and altered perception of the passage of time noted just prior to entering and upon awakening from hypnosis. Upon being awakened from the trance the subjects were asked

to estimate the number of minutes they had been under hypnosis. This estimate was compared with the actual recorded time value and a judgment of a significant difference noted if the estimated value varied 10 or more minutes from the "real" value.

2. A reported feeling of detachment and of being an observer to the behavior elicited in the tests for depth of trance given above. This was judged from the subject's spontaneous remarks about the trance experience and from answers given to the question, "Describe in as much detail as you can without strain what you felt like during the trance?" Although of necessity somewhat subjective the presence of such feelings was fairly easy to score from the clear-cut nature of the comments of the subjects without further detailed probing.

3. Fuzzy, or only partial recall, for events in hypnosis. Amnesia was judged to be present from both the quality and quantity of the recall of events during the trance at the time of the posttrance interrogation of the subject. Each subject's amnesia, for this purpose, was tested by asking him to recall as many of the tests (experiences) specifically requested of him as the trance was gradually deepened or increased. Quantitatively amnesia was deemed to be present if the subject could only recall six or fewer of the experiences used to test the depth of the trance as noted above. The quality of the clarity or vagueness of his recall of these "tests" was additionally noted.

4. Inability to verbalize on recovery certain letters of the alphabet to which suggestions of amnesia had been attached. Just prior to awakening, the subjects were given the following instruction:

In a moment I am going to say five letters to you slowly at the rate of one a second. You will be able to hear them without strain and to remember them easily while you are relaxed. When I wake you up in a few minutes you probably will have great difficulty in remembering the letters I have told you. In fact, you will find it to be so much of an effort to recall these letters that you will have no wish to do so. The letters are E . . . J . . . P . . . T . . . Y.

Amnesia was judged to be present when after awakening the subject was unable to recall the letters when told to recall the five letters given to him during the trance.

5. Amnesia for posthypnotic suggestions given during the trance. Instructions patterned after those given by Weitzenhoffer and Hilgard (1959, pp. 23-24, Form A) were used to establish this test of amnesia. The exact instructions were as follows:

Remain deeply relaxed and pay close attention to what I am going to tell you next. In a moment I shall begin counting from one to five. You will gradually wake up. By the time I reach "five" you will be fully alert, in your normal state of wakefulness. After you open your eyes, you will feel fine. You will have no headache or other aftereffects. A little time after you have awakened

I shall tap my pencil on the table. When I do, you will get up from this chair and move to the chair that is straight ahead of you, and sit in it. You will do this, but forget that I told you to do so. Ready, now: 1 . . . 2 . . . 3 . . . 4 . . . 5.

Amnesia was judged present when the subject was unable to recall the posthypnotic suggestion as given to him under the trance.

Contact with the experimental subjects was then terminated until 1 week later.

One week later each subject in both the control and experimental groups was rehypnotized and readministered the ACL while under as deep a level of hypnosis as possible using the same instructions as before. Upon awakening the ACL was readministered a third time, and each subject was given the Ideal Therapeutic Relationship Scale. Instructions for the Ideal Therapeutic Relationship Scale were as follows:

The papers in front of you contain a number of statements expressing the way in which a hypnotic subject may feel toward a hypnotist. Would you please indicate the way you feel about the relationship you have just had with the hypnotist. Please be as frank as possible since your answers will constitute one of the important aspects of the present study.

Upon completing this task the control subjects were dismissed from any further participation in the study. The experimental subjects were asked to take the abbreviated group booklet form of the

TABLE 1
SUMMARY OF PROCEDURES USED WITH CONTROL AND EXPERIMENTAL SUBJECTS

Session	Subjects	
	Experimental (N = 20) ^a	Control (N = 24) ^b
First	ACL Induction via eye fixation Davis-Husband scaling Spontaneous amnesia indicated by Weitzenhoffer criteria	ACL Induction via eye fixation Davis-Husband scaling
Second (One week later)	Second induction via eye fixation ACL: Under hypnosis ACL: Awake Ideal Therapeutic Relationship Scale (Fiedler) MMPI	Second induction via eye fixation ACL: Under hypnosis ACL: Awake Ideal Therapeutic Relationship Scale (Fiedler)

^a All capable of spontaneous amnesia.

^b Matched for age, sex, and college status.

TABLE 2
MEANS FOR GROUP, TEST SESSION, AND ADJECTIVE CHECK LIST SCORES (SQUARE ROOT TRANSFORMATION SCORES)

Condition (totals values)	SS	N	M value
Control group	1298.57	216	6.01
Experimental group	1112.01	180	6.18
Initial test session	787.38	132	5.96
Hypnotic test session	834.02	132	6.32
Retest test session	789.18	132	5.98
Self-favorability ACL score	1147.09	132	8.69
Self-acceptance ACL score	803.85	132	6.09
Self-criticalness ACL score	459.64	132	3.48

MMPI (Cottle, 1953). The instructions for this are contained on the face-sheet of the booklet form and are standardized for this purpose.

Table 1 summarizes the above procedures used in this study.

RESULTS

The reliability of the adaptation of the ACL for the present experimental situation was established by computing test-retest correlation coeffi-

TABLE 3

MEANS FOR GROUP, TEST SESSION, AND ADJECTIVE CHECK LIST SCORE INTERACTIONS (SQUARE ROOT TRANSFORMATION SCORES)

Interaction and condition	SS	N	M value
Group × test session			
Control			
Initial	433.92	72	6.03
Hypnotic	431.43	72	5.99
Retest	433.22	72	6.02
Experimental			
Initial	353.46	60	5.89
Hypnotic	402.59	60	6.71
Retest	355.96	60	5.93
Group × ACL score			
Control			
Self-favorability	625.74	72	8.69
Self-acceptance	434.08	72	6.03
Self-criticalness	238.75	72	3.32
Experimental			
Self-favorability	521.35	60	8.69
Self-acceptance	369.77	60	6.16
Self-criticalness	220.89	60	3.68
Test session × ACL score			
Initial			
Self-favorability	377.87	44	8.59
Self-acceptance	262.42	44	5.96
Self-criticalness	147.09	44	3.34
Hypnotic			
Self-favorability	381.71	44	8.68
Self-acceptance	276.63	44	6.29
Self-criticalness	175.68	44	3.99
Retest			
Self-favorability	387.51	44	8.81
Self-acceptance	264.80	44	6.02
Self-criticalness	136.87	44	3.11

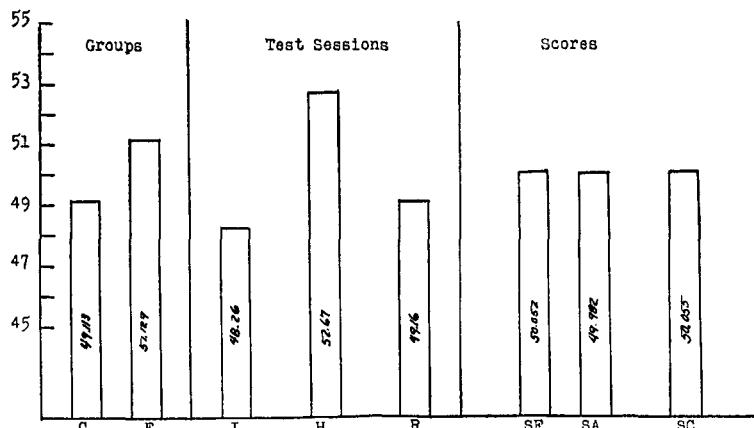


FIG. 1. Analysis of variance results between groups, test sessions, and ACL scores. (Under groups: C = control, E = experimental; under test sessions: I = initial, H = hypnotic, R = retest; under scores: SF = self-favorability, SA = self-acceptance, SC = self-criticalness.)

clients for the control and experimental groups. Values varied from .72 to .93, and after the correlations were transformed to standard scores no significant difference at the .05 level was found between experimental and control groups for the three scoring categories (see Table 2). In agreement with earlier work (Woolington & Markwell, 1962) test-retest influences were equal for both

groups and the adaptation of the ACL was deemed sufficiently reliable for use in the present study.

A Design VI analysis of variance technique (Lindquist, 1956) using standard score data indicated that attitudes toward the self did change under hypnosis (see Figure 1). Statistically significant differences beyond the .01 level were

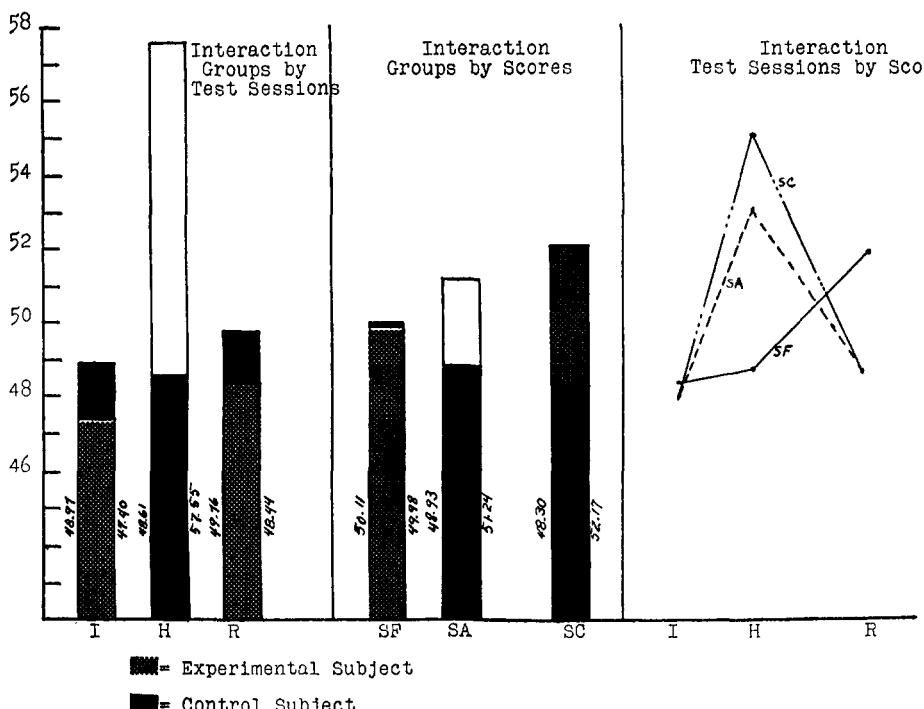


FIG. 2. Analysis of variance results for interactions. (See Figure 1 for definition of symbols.)

found between the results for the initial, hypnotic, and posttest sessions (see Figure 2 and Table 3). The interaction between test sessions and groups was also significant, $p > .01$. No significant differences were found between the groups or between score categories alone, or in the interaction between scores and groups. The interaction between test sessions and scores approached significance ($> 5.0\%$). The triple-order interaction was significant at more than the .01 level.

A further test of the significance of the differences found in the analysis of variance was made possible by performing *t* tests of the means for the testing sessions. A *t* value of 2.51 was found between the initial and hypnotic session means and a *t* value of 2.63 was found between the hypnotic and posthypnotic session means. These values are both significant, $p < .05$, $df = 42$. A *t* value of .74 between the initial and posthypnotic session means was not significant even at the .10 level.

Pearson correlation coefficients between the number of contradictory ACL answers given under hypnotic and under waking conditions and hypnotic trance depth scores support the findings of differences in self-attitude as a function of depth. The correlation of .61 for the 44 subjects of the control and experimental groups combined was significant. When the two groups were analyzed separately the experimental group showed a higher correlation, .82, than the control group, .48, but the differences were not significant when *z* transformations were performed. This result is supported in part by the findings of the tendency for such measures of depth scores to correlate with changes in self-attitude reported in earlier research (Woolington & Markwell, 1962).

Part of the effect of the subject's relationship

to the hypnotist-experimenter, on the above findings, was checked by correlating the subjects' conception of their relationship to the hypnotist, given by their Ideal Therapeutic Relationship score, against both the number of hypnotic-waking contradictory ACL answers and their hypnotic depth scores. The Pearson coefficient of .55 between such Ideal Therapeutic Relationship scores and the number of contradictory ACL answers the subject gave under hypnosis when compared to his waking answers was significant, $p < .01$. These results indicate that the more the subject is "favorable" to a "helping" relationship with the hypnotic experimenter the more likely some alteration in such a measure of self-concept will occur. In addition, the correlation of .79 between the subject's Ideal Therapeutic Relationship scores and their hypnotic depth scores was highly significant, $p \leq .01$. These findings are in agreement with considerable evidence that hypnotic trance depth is a function of the relationship conceived by the subject as existing between the experimenter and himself. These results also suggest that the role conceptions of the subject may play a significant part in creating the results found in the analysis of variance. That is, the more the subjects perceived their relationship to the hypnotist to be identical to that of an ideal therapeutic one the more they manifested a difference in their waking-hypnotic attitudes towards themselves, and the deeper they appeared to be capable of entering the trance state. Certain of their spontaneous remarks supported this interpretation of the results.

The MMPI data were helpful in providing a partial answer to the question of why a given subject's contradictory ACL answers in the hypnotic as compared to the waking state seemed to vary in a specific direction (that is, to be-

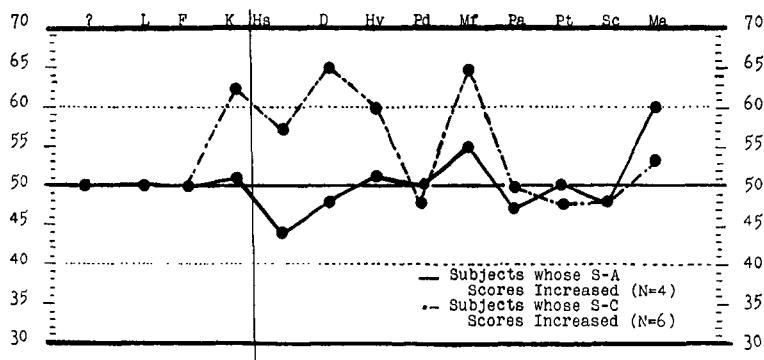


FIG. 3. MMPI profile comparisons of males showing different self-attitudes under hypnotic-amnesia state.

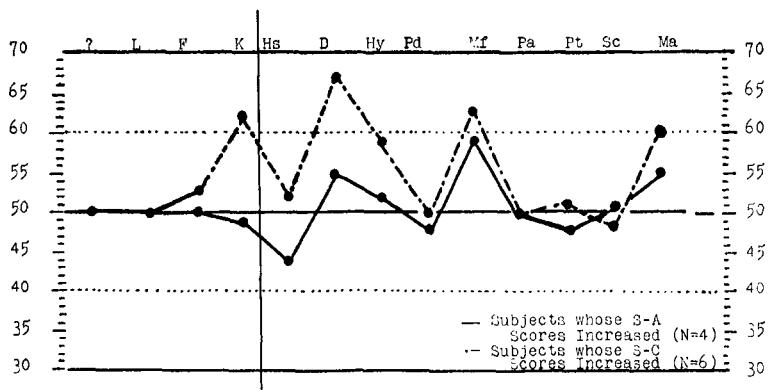


FIG. 4. MMPI profile comparisons of females showing different self-attitudes under hypnotic-amnesia state.

come more self-accepting or self-critical in individual cases while under hypnosis). The MMPI profiles of those men and women who became more self-critical under hypnosis can be seen to differ from those whose attitudes became more self-accepting (see Figures 3 and 4). The profiles of those who became more self-accepting compare very favorably with the known results from a random sample of college men and women measured by previous investigators (Cottle, 1953). The profiles of those who became more self-critical, however, depart to a considerable extent, generally in a direction suggesting that they more often experience emotional distress; even though technically their group scores remain within the usual thirtieth to seventieth percentile levels considered as the "normal" range. As a group the hypnotically self-critical subjects were more defensive and anxious with tendencies to "neurotic-like" symptom complaints.

REFERENCES

ALLPORT, G. W. The ego in contemporary psychology. *Psychological Review*, 1943, 50, 451-478.

ALLPORT, G. W. *Becoming*. New Haven: Yale Univer. Press, 1955.

BARRY, H., JR., MACKINNON, J. W., & MURRAY, H. A. Studies in personality: Hypnotizability as a personality trait and its topological relations. *Human Biology*, 1931, 3, 1-16.

BELLAK, L. An ego-psychological theory of hypnosis. *International Journal of Psycho-Analysis*, 1955, 37, 375-378.

BERTOCCI, P. A. The psychological self, the ego, and personality. *Psychological Review*, 1945, 52, 91-99.

BRENNAN, M., & GILL, M. M. *Hypnosis and related states*. New York: International Univer. Press, 1959.

BRENNAN, M., GILL, M. M., & HACKER, F. J. Alterations in the state of the ego in hypnosis. *Bulletin of the Menninger Clinic*, 1947, 11, 60-66.

CONN, J. H. Hypnosynthesis: Hypnosis as a unifying interpersonal experience. *Journal of Nervous and Mental Disease*, 1949, 109, 9-24.

COTTE, W. C. The MMPI: A review. *University of Kansas Studies in Education*, 1953, 3(No. 2).

DAVIS, L. W., & HUSBAND, R. W. A study of hypnotic susceptibility in relation to personality traits. *Journal of Abnormal and Social Psychology*, 1931, 26, 175-182.

DORCUS, R. M. (Ed.) *Hypnosis and its therapeutic applications*. New York: McGraw-Hill, 1956.

ERICKSON, M. H. Self-exploration in the hypnotic state. *Journal of Clinical and Experimental Hypnosis*, 1955, 3, 49-57.

FARBEROW, N. L., & SARBIN, T. R. A clinical study of role and self in hypnotic age regression. *American Psychologist*, 1950, 5, 305. (Abstract)

FIEDLER, F. The concept of the ideal therapeutic relationship. *Journal of Consulting Psychology*, 1950, 14, 239-245.

GILL, M. M., & BRENNAN, M. Treatment of a case of anxiety hysteria by an hypnotic technique exploring psychoanalytic principles. *Bulletin of the Menninger Clinic*, 1943, 7, 163-171.

GOUGH, H. G. *Reference handbook for the Gough Adjective Check List*. Berkeley: University of California, Institute of Personality Assessment and Research, 1955.

HATHAWAY, S. R., & MCKINLEY, J. C. *Revised manual for the Minnesota Multiphasic Personality Inventory*. New York: Psychological Corporation, 1951.

KLEMPERER, EDITH. Changes of the body image in hypnoanalysis. *Journal of Clinical and Experimental Hypnosis*, 1954, 2, 157-163.

KLEMPERER, EDITH. The spontaneous self-portrait in hypnoanalysis. *Journal of Clinical and Experimental Hypnosis*, 1955, 3, 28-33.

KLINE, M. J. *Hypnodynamic psychology*. New York: Julian Press, 1955.

KLINE, M. J. *Freud and hypnosis*. New York: Julian Press, 1958.

LEUBA, C. Hypnosis as a method of controlling variables in psychological experiments. *American Journal of Psychology*, 1946, 59, 686-690.

LINDQUIST, E. F. *Design and analysis of experiments in psychology and education*. Boston: Houghton Mifflin, 1956.

LOWE, C. M. The self-concept: Fact or artifact? *Psychological Bulletin*, 1961, 58, 325-336.

MARTIN, R. M., & MARCUSE, F. L. Characteristics of volunteers and nonvolunteers for hypnosis. *Journal of Clinical and Experimental Hypnosis*, 1957, 5, 176-180.

RAIMY, J. C. The self-concept as a factor in counseling and personality organization. Unpublished doctoral dissertation, Ohio State University, 1943.

ROGERS, C. R. *Client-centered therapy*. Boston: Houghton Mifflin, 1951.

ROGERS, C. R., & DYMOND, R. (Eds.) *Psychotherapy and personality change*. Chicago: Univer. Chicago Press, 1954.

ROSENZWEIG, S., & SARASON, S. An experimental study of the triadic hypotheses: Reaction to frustration, ego-defense, and hypnotizability: I. Correlational approach. *Character and Personality*, 1942, 11, 1-19.

SARBIN, T. R. Contributions to role-taking theory: I. Hypnotic behavior. *Psychological Review*, 1950, 57, 255-270.

SNYGG, D., & COMBS, A. *Individual behavior*. New York: Harper, 1959.

WEITZENHOFFER, A. M. *Hypnotism: An objective study in suggestibility*. New York: Wiley, 1953.

WEITZENHOFFER, A. M. *General techniques of hypnotism*. New York: Grune & Stratton, 1957.

WEITZENHOFFER, A. M., & HILGARD, E. R. *Stanford Hypnotic Susceptibility Scale*. Palo Alto, Calif.: Consulting Psychologists Press, 1959.

WHITE, R. W. A preface to the theory of hypnotism. *Journal of Abnormal and Social Psychology*, 1941, 36, 477-505.

WOLBERG, L. R. *Medical hypnosis*. Vol. 1. New York: Grune & Stratton, 1948.

WOOLINGTON, J. M., & MARKWELL, E. D. The influence of hypnosis on self-attitudes. *International Journal of Clinical and Experimental Hypnosis*, 1962, 10, 109-113.

(Received June 12, 1963)

Journal of Personality and Social Psychology
1965, Vol. 1, No. 2, 161-165

EFFECT OF CONTINUOUS RESPONDING ON THE ORDER EFFECT IN PERSONALITY IMPRESSION FORMATION¹

RALPH H. STEWART²

University of Portland

The effects of stimulus sequence length and mode of responding in personality impression formation were studied. Sets of personality trait adjectives of 3 different lengths served as stimuli. In the final mode of responding, the impression was given only after all adjectives were presented. In the continuous mode, the cumulative impression was given after each successive adjective. There was a primacy effect for the final mode of responding, and a recency effect for the continuous mode. This recency effect, however, was due primarily to 1 of the 2 replications. Strikingly similar order effects for all 3 sequence lengths were obtained. 3 theoretical positions which consider the effect of mode of responding were discussed. A linear operator model seemed most in accord with the data.

The pro-con versus con-pro paradigm has seen considerable use in attempts to elucidate the role of variables governing the relative importance of earlier and later information in impression formation and opinion change (e.g., Anderson,

son, 1959; Hovland, 1957; Luchins, 1958; Miller & Campbell, 1959). As yet, however, no clear picture seems to have emerged. One factor that has varied among the previous studies is the amount of information, or length of the stimulus sequence. However, the effect of this variable cannot be assessed because of the different types of stimuli used in the various studies.

The work of Asch (1946) has called attention to the use of personality trait adjectives, which constitute a large body of relatively homogeneous stimuli. Anderson and Barrios (1961) used

¹ The data for this study were collected at the University of California, Los Angeles. The author wishes to thank Norman H. Anderson for suggesting this problem, and for his continued advice and encouragement.

² Now at Cedars-Sinai Medical Center, Los Angeles, California.